

CLAIMS

What is claimed to be new and desired to be protected by Letters Patent is set forth in the appended claims.

I claim:

1. An axle having detachable spindles for connection to a wheel assembly for use on a vehicle, comprising:
 - a) an axle tube having first and second opposing ends, said first and second ends each having first cross apertures therein;
 - b) means for attaching said axle tube to the vehicle, whereby the axle tube can be removably attached to the vehicle;
 - c) a collar disposed on each of said first and second ends of said axle tube to permit the ends of the axle tube to be strengthened, said collars each having second cross apertures therein, wherein said second cross apertures are co-aligned with said first cross apertures;
 - d) a spindle disposed on each of said first and second ends of said axle tube, said spindle having first and second opposing ends, wherein said first end is connected to a wheel assembly, wherein said second end is matingly disposed inside of each of said first and second ends of said axle tube, wherein said second end of each of

said spindles has a third cross aperture therein, wherein said third cross apertures are co-aligned with said first cross apertures; and,

e) means for a cross connector for connecting said spindles to said axle tube whereby a cross connector passes through the first, second and third cross apertures to connect the spindle, collar and axle tube.

2. The axle of Claim 1, further comprising means for a wheel assembly being disposed on said first end of said spindle whereby the wheel assemblies of the vehicle can be attached to the axle.

3. The axle of Claim 2, wherein said means for attaching said axle tube to the vehicle comprises a pair of spring seats disposed on said axle tube to permit said axle tube to be removably mounted to the vehicle.

4. The axle of Claim 3, wherein said spring seats are spaced apart on the outside of said axle tube, said spring seats being complementarily spaced apart a distance for cooperative alignment with the vehicle.

5. The axle of Claim 4, further comprising threads being disposed on said first end of said spindle to permit attachment to the wheel assembly of the vehicle.

6. The axle of Claim 5, wherein said axle tube, said collar and said

second end of said spindle are sized to be tightly fitted together.

7. The axle of Claim 6, wherein said means for a cross connector comprises:

a) an elongated cross connector having first and second opposing ends, wherein said cross connector has a head on said first end and threads on said second end, wherein said cross connector passes through said first, second and third cross apertures to permit said axle tube, collar and spindle to be joined together;

b) a sleeve disposed on said cross connector to permit said cross connector to tightly fit in said first, second and third cross apertures to permit said axle tube, collar and spindle to be tightly joined together; and,

c) a fastener being disposed on said threads of said cross connector to permit said axle tube, collar and spindle to be tightly joined together.

8. The axle of Claim 7, further comprising washers being disposed on said first and second ends of said cross connector to permit said axle tube, collar and spindle to be tightly joined together.

9. The axle of Claim 8, wherein said sleeve is made of deformable

material.

10. The axle of Claim 9, wherein said sleeve is made of compressible material.

11. The axle of Claim 9, wherein said sleeve is made of rubber material

12. The axle of Claim 11, wherein said means for a wheel assembly comprises:

- a) a wheel hub to permit a wheel to be attached thereto, said hub having an inside and an outside, said hub having an inner and outer bearing cup;
- b) an inner and outer bearing being disposed respectively in said inner and outer bearing cups;
- c) an inner grease seal being disposed inside said inner bearing to permit grease to be retained in said inner bearing cup;
- d) a washer being disposed outside said outer bearing; and,
- e) a threaded fastener matingly disposed on said threaded end of said spindle being disposed outside said washer to permit the wheel assembly to be mounted to the spindle.

13. The axle of Claim 12, wherein said fastener is fixedly mounted onto

said threads of said spindle so that said fastener cannot be removed from said spindle.

14. The axle of Claim 13, wherein said spindle and said wheel assembly can be removed from said axle tube by disconnection of said spindle from said axle tube when said fastener is fixedly mounted onto said threads of said spindle.